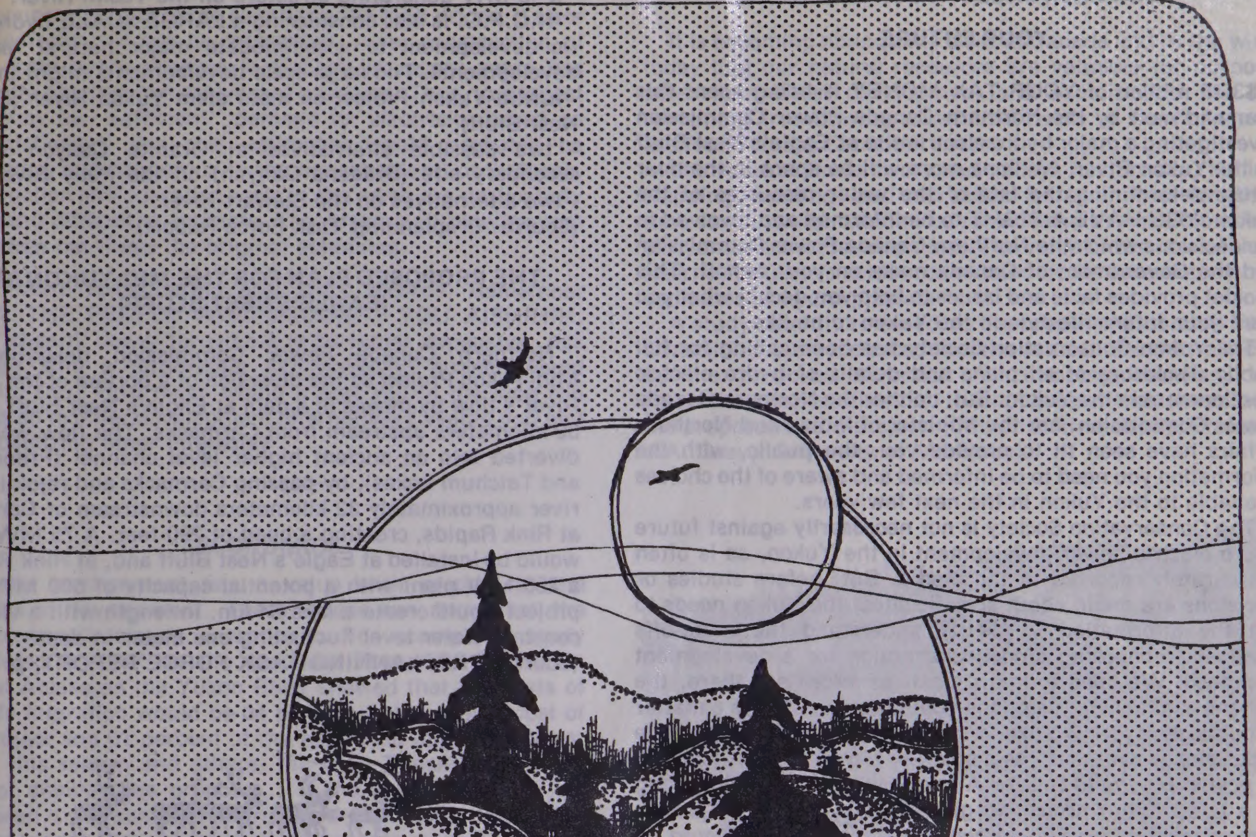

DAM IT ALL - NO!

HYDRO ELECTRIC
POWER PLANNING IN THE YUKON

YUKON CONSERVATION SOCIETY

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...on Conservation Society

YOUR RESOURCES - YOUR LIFESTYLE

YOUR FUTURE

$3.15 million of YOUR TAX MONEY is being spent this year and next by the Northern Canada Power Commission investigating a major hydro electric site at Eagle's Nest Bluff on the Yukon River. Millions more will be spent in the near future determining the fate of the water resources of the Yukon. YOU HAVE A RIGHT to be informed and involved in the decisions which the Northern Canada Power Commission and the Government of Canada make on your behalf. This booklet provides facts and issues to help you decide what you want your future lifestyle in the Yukon to be like.

The Yukon Conservation Society has been calling for full public disclosure of all plans and details of hydro electric development in the Yukon. But, neither the Northern Canada Power Commission, nor the Minister of Indian and Northern Affairs have seen fit to provide you, the public, with the information you need to be informed and aware of the choices available to the Yukon in the next few years.

The Conservation Society is not necessarily against future hydro electric power development in the Yukon, as is often inaccurately reported in the media. But, before studies or decisions are made about specific sites, the Yukon needs to get the information to clearly understand the trade-offs involved in choosing a particular option for a development approach. We need to know what resources are there, the options available for using them and then decide, as **a matter of public policy,** how Yukoners wish to use them. Large scale industrial growth, such as a smelter, pipeline electrification, or power exports to B.C. or Alaska, will require the building of a large hydro project to generate the necessary power. Future residential, commercial and mining needs would be modest in comparison and could be accommodated by small scale projects which might include alternate energy sources such as thermal (if non-polluting), natural gas, bio-mass, etc.

-- What are the COSTS and what are the BENEFITS of various energy sources -- and all the factors: economic, social and environmental?

-- WHO BENEFITS and WHO PAYS?

-- What life-style do Yukoners really want? What type of ENERGY POLICY and GROWTH POLICY will bring this about?

-- Do we need a large-scale project or will OTHER OPTIONS give Yukoners what they want?

Study the facts, think of the future, make your views known NOW before the decisions about the future are made for you and your children.

SOME FACTS

In 1975, N.C.P.C. commissioned a report (Sigma Report) to identify potential hydro sites. The mid-Yukon (or Eagle's Nest Bluff) site was suggested in 1976 by Montreal Engineering. At present, investigations have identified 10 potential hydro sites and 2 major diversion schemes on the main stem Yukon and an additional 47 sites on the tributaries.

N.C.P.C. is considering several SMALL SCALE hydro electric developments:

- addition of a 10 Megawatt fourth wheel at Whitehorse Rapids hydro plant with a possible structure on Atlin River for controlling the level of Atlin Lake;
- diversion of waters from the Yukon watershed to the Aishihik watershed to augment the Aishihik hydro plant generating capacity and;
- a 45 MW generating structure on the Teslin River.

N.C.P.C. is also considering a LARGE SCALE hydroelectric development to accommodate major natural resource developments. The large scale developments might include:

- a Mid-Yukon Project on main stem Yukon River (Eagle's Nest Bluff);
- two possible alternatives at Granite Canyon with a secondary site (Bradens Canyon) on the Pelly River and;
- two alternatives on the Stewart River.

(Source: Preplanning Task Force Report)

THE PROPOSED PLAN FOR THE MID-YUKON SITE [EAGLE'S NEST BLUFF]

Northern Canada Power Commission describes the Mid-Yukon Project as the diversion of a portion of the Yukon River's flow by means of a dam at Eagle's Nest Bluff, about 32 kilometers upstream from Carmacks. The flow would be diverted into an ancient higher level channel (Frenchman and Tatchum Lakes), by-passing Carmacks and rejoining the river approximately 32 kilometers downstream of Carmacks at Rink Rapids, creating a head of 290 feet. A 75 MW plant would be installed at Eagle's Nest Bluff and, at Rink Rapids, a 250 MW plant with a potential capacity of 500 MW. The project would create a lake 64 km. in length with a virtually constant water level fluctuating one meter in depth.
(Source: PREPLANNING TASK FORCE REPORT, p. 78)

DEMAND

At the present time, there are NO COMMITTED CUSTOMERS for additional electrical power in the Yukon. **Kaiser Aluminum** is considering Whitehorse as a possible site for a smelter requiring about 300 MW of power initially. Kaiser would likely select Whitehorse only if power costs were relatively low and government concessions and "co-operation" were high (i.e. we pay).

The **Alaska Highway gas pipeline** could be a potential customer. If conversion to electricity to power the seven compressor stations did occur, this would require between 175-210 MW of power. If a boost in line capacity is required, over 350 MW would likely be utilized by the pipeline.

New Mines might also be customers for electricity. However, electricity is generally a very small portion of total mining costs. New mines would probably generate their own power if no existing surplus of electricity was available to them. It is evident that new mines could open up without having to destroy renewable resources to serve them with electricity.

Domestic and commercial demand for electricity is likely to be relatively minor compared to large-scale developments and could easily be provided in the foreseeable future by small scale generation such as a fourth wheel at the Whitehorse dam.

It is important to remember that the Yukon tends to have a boom and bust economy, even in the midst of pipeline talk. As NCPC itself points out: "The demand for electric power in northern Canada is very diverse and uncertain." (J. Long, Feb. 8, 1979).

BOREAL INSTITUTE
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The existance of actual customers in the future will depend largely upon the cost of the electricity. At high prices, Kaiser and Foothills will not be interested. Also, construction of large scale hydro projects in Canada in recent years has generally resulted in massive cost overruns. Thus, to suggest there may be "sufficient" demand for electricity based on "optimistically" low cost estimates would probably be misleading and dangerous to the householders' pocketbook. Construction and operation costs in the north are particularly costly and difficult to estimate. The Alyeska oil pipeline cost **more than ten times** the original estimates.

It's worth remenbering past track records. Remember NCPC: THE PEOPLE WHO BROUGHT YOU AISHIHIK. That "cheap" power turned out to be rather expensive. Ask yourself who a large-scale hydro-electric project would benefit. You? How much would it cost you in the long run compared to other development alternatives? Would you end up subsidizing other interests?

ECONOMICS

"...the environment has a value with respect to the benefits of development. These values can show that the development is simply uneconomic. For example, a study completed in 1967 on the proposed Ramparts Project in central Alaska on the Yukon River showed that the costs of wildlife migration would be 34 percent of the capital cost of the project and 61 percent of the estimated operating costs. ...For this reason and others, the U.S. Department of the Interior shelved the proposal... If the environment is left unaltered it will continue to provide the recreation and other uses as before. Development of resources through a dam has costs which increase over time because the resource is permanently altered. The environment cannot be reproduced while electricity can be obtained from other sources...There is a growing awareness that wilderness areas are increasing in value each year because the population demand on those areas is increasing... Technological advances will help us to get the power we will need in the future, but they won't help us to replace a drowned valley." (Erkiletion, "Yukon Power", Y.C.S., 1975, p. 12)

Thus, when we consider the value of lost resources of the years, effects on employment, the tourist industry, etc., it may well be that a dam will provide less economic development than would developing the renewable resources already there.

When the costs and benefits of our options are considered, we should book at the long run. A recent letter to the editor of the Whitehorse Star raises many long-run questions:

"(NCPC has) put all their eggs in one basket with that 3 million dollars they've been given to play with... One dam on the Yukon would lead to others in the future - meaning that eventually, the entire river would be turned into a series of large storage lakes with waters backed up not only on the Yukon, but also the Little Salmon, Big Salmon and Teslin Rivers. And the levels of Laberge, Marsh, Bennett, Tagish, Atlin and Teslin Lakes would be raised to boot. It wouldn't be the death of the Yukon River, it would be the death of an entire watershed.

I would probably live to see Five Fingers flooded out, and maybe even Fort Silkirk - not to mention Hootalingua, Little Salmon village and Big Salmon village, all of which would go under in the early stages of hydro development with the first dam." (Max Fraser, 1979)

ALTERNATIVE USE AND VALUE OF RIVERS AND LAKES

It is becoming abundantly clear in Canada and in the world today that our natural resources are valuable for purposes other than direct development and exploitation. The few remaining free flowing unpolluted rivers in North America are found in the Canadian north.

The value of these rivers and valleys for forestry, fishing, trapping, hunting, and recreation for an infinite length of time can outweigh the limited returns and irreversible effects of hydro-electric development. The value of the loss of these alternative uses is seldom calculated in the assessments and estimates of hydro projects.

A study recently released on the proposed Churchill River Diversion project indicated that the value of the area affected by the proposed diversion for trapping, hunting, and recreation purposes is equal to if not greater than the value of the proposed hydro project. (Churchill River Study, Professor J.A. Gray, University of Manitoba).

Half submerged cabin at Mayo Lake.

WILDLIFE

"The effects of a large reservoir are loss of habitat for aquatic fur bearers, loss of winter range for ungulate species such as moose, barrier effects to seasonal migration and loss of wildfowl areas. These effects will extend beyond the area flooded in that certain animals spend only a part of the year in the valley bottoms... The loss of these animals through flooding will affect the ecological balance in adjacent areas. Other effects result from the operation of the dam with the unnatural fluctuations in the reservoir and the river and interference with animal migration by power lines and related works such as roads and camps." (Dr. M. Hoefs, Yukon Game Branch, 1975 in Y.C.S., "Yukon Power")

ECONOMIC EFFECTS: Uses of wildlife resources are important to the Yukon's economy (estimated at $10 million in 1975 by Y.T.G.). A large dam will effect a variety of activities and businesses:

- Y.T.G. received income from the purchase of licenses by 4,500 resident and non-resident hunters in 1977.
- About 630 non-resident hunters in 1977 provided income to outfitters, guides, suppliers, hotels, etc. in the Yukon.
- Over 1,000 of the 3,870 resident hunters harvested moose during the 1977 season and about 300 more harvested goats,

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sheep or caribou. At today's meat prices, this represents a substantial contribution to the household economy. Additional income was received by supplier, etc. Hunting by Indians who don't require licenses would add more to these figures.

- In 1978, fur sales from trapping contributed about $500,000 to the Yukon's economy. There are approximately 290 trapping areas in the Basin; about half are held by Indians (1978).

CULTURAL EFFECTS: Trapping provides a situation where Indians and whites come together to share the use of the resource and to share and understand a common way of life. For many Indians, hunting and trapping are vital to their culture and life-style - not to mention the subsistence value. For both Indians and whites, hunting provides a form of recreation which is highly valued. (Source: PREPLANNING TASK FORCE REPORT, 1979)

FISH

''The extensive fisheries of the Yukon River Basin are utilized for recreational, commercial and subsistence fishing. An abundant supply of high quality sport fish in the Yukon offers a wide variety of fishing opportunities to both resident and non-resident fishermen.'' In 1975, direct and indirect expenditures by non-resident tourists is estimated at $1.35 million and, as well, accounted for part of the estimated $2.7 million spent by tourists on other activities. Residents in the Yukon are estimated to have spent $3.5 million on fishing activities, supplies, etc. Several local businesses and several hundred people are involved commercially with the sport fishing industry which is the most important economic use of Yukon fish resources.

The Yukon River Basin is the third largest salmon producing river in North America. In 1977, commercial salmon licenses issued in the Yukon numbered 36 while commercial freshwater licenses numbered 25. About 90 percent of the commercial salmon catch is taken in the Yukon River downstream of Carmacks. Although value estimates are incomplete, it appears that ''the value of the annual salmon harvest has increased substantially since 1967.'' Canada is also negotiating compensation from the U.S. since Alaskan fishermen harvest salmon spawning in Yukon waters. Successful completion of these negotiations could return substantial value to Canada from the Alaska fishery (Meyer, 1979). Fish are an important part of the traditional resource base of Indian people both for economic and cultural reasons.

Interference with fish movements and loss of habitat both on the Yukon main stem and its tributaries could affect Canadian and American fisheries, especially salmon. Past examples are available: The Mayo River chinook run was eliminated by the Mayo hydro plant in 1952. The upper Yukon salmon run dropped drastically as a result of the Whitehorse dam and is in danger of extinction. (Kendal, Canada Fisheries, 1975). The McClintock salmon run was considerably reduced by the construction of a weir a few years ago. The hazards to fish from a power dam come from restrictions to upstream migrations for spawning, from the complete change in the flow regime and the change from a river to a lake environment. The margins of a reservoir are unproductive due to a continual wetting and drying and, in the long run, cause a decline in fish populations.
(Sources: PREPLANNING TASK FORCE REPORT, 1979; Y.C.S. ''Yukon Power'', 1975)

Bullmoose grazing

FORESTRY

''During the gold rush, the forest resources of the Yukon River Basin were severely exploited and subjected to unnecessary destruction by fire. The forests eventually recovered and today there is an increased interest in their development.'' Around 1975 the timber cut in the Yukon was about 15 percent (15 m.b.f. out of 100 m.b.f.) of the potential cut. The Yukon's mercantile timber resources are divided into the Liard Basin (59 percent), the Teslin-Nisutlin Basin (16 percent) and the Pelly Basin (17 percent) (Nyland, DIAND, 1975).

There are approximately 20 portable sawmills operating in the basin (1979) and this contributes substantially to the Yukon economy. There appears to be some potential for an economically viable industry in various parts of the Basin. ''Most productive sites for timber growth are in the floodplains of the Basin. Inundation would eliminate these sites from production of timber products.''
(Sources: Y.C.S. ''Yukon Power'', 1975; Preplanning Task Force Report, DOE, 1979)

TOURISM, PARKS AND RECREATION

''In terms of recreation and tourism, the Yukon River Basin rates as one of Canada's most attractive wilderness areas. It is noted for its superb scenery, clean lakes, wild rivers, abundant wildlife and fish, historical and archeological sites and excellent boating. **With tourism, the Basin's second most important and fastest growing industry, the use of water resources for recreation is of primary economic and aesthetic concern.''**

''The growing demand by both the Basin's residents and tourists for accessible reserved recreation areas and the increasing importance of the tourist industry has lead to federal and territorial government involvement in parks, recreation and historic resource programs within the Yukon

River Basin... The ongoing program of planning and development under the Canada-United States Klondike Gold Rush International Historic Park is a major undertaking. Projects included in the Historic Program to date are: The Chilkoot Gold Rush Trail; SS Klondike N.H.S.; and the Dawson City N.H.P. The Yukon River is the essential historic and recreation link between these components... Parks Canada... and Y.T.G. are currently preparing a concept plan for the Yukon River as a historical and recreational waterway from Bennett to the Alaska/Yukon border.''

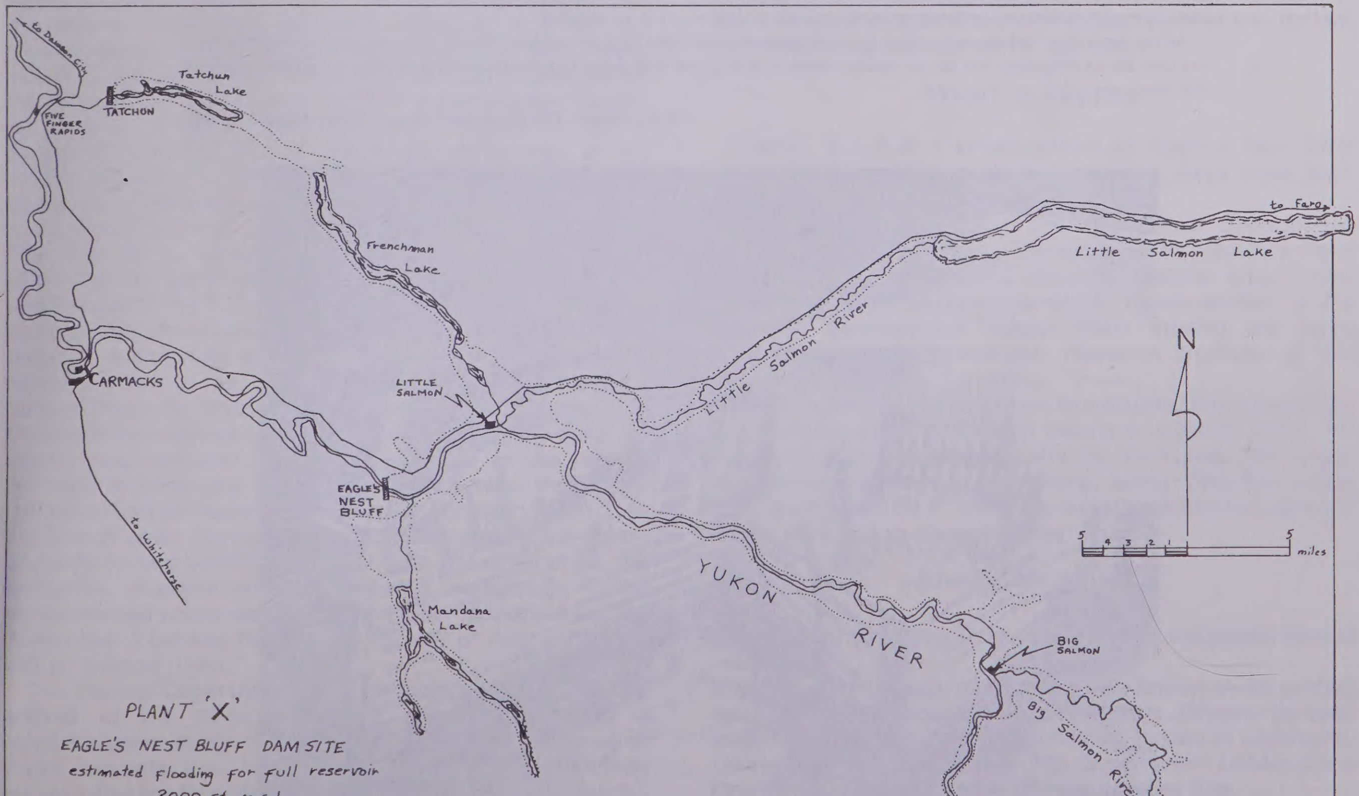
''A preliminary reconnaissance by Parks Canada in 1975 has suggested that at least 2 areas within the Yukon River Basin may have National Park potential. The National Parks Branch survey in 1971-73 of 65 rivers across Canada RANKED THE YUKON AMONG THE TEN OUTSTANDING WILDERNESS RIVERS IN THE COUNTRY.'' In 1979, D.R.E.E. and Y.T.G. signed an agreement to expand the renewable resources information base and to develop ncreased tourist and recreational facilities, both for their need in relation to demand, and as a source of training, employment and income opportunities for residents of the Basin. The federal, provincial and territorial governments are also considering a **heritage river system** to preserve the natural and cultural heritage through environmental protection of the rivers. The Yukon river has been discussed as a likely choice for such a designation.

''Since close to 90 percent of the Yukon's population and most of the conventional transportation infrastructure is located within the Yukon River Basin, it is only logical that recreation park development will be focused in this area. The untouched wilderness character of the Basin is of particular value for scientific study. The International Biological Program has proposed several reserves to protect landmark ecosystems for scientific study... Nearly 1000 recreation lots have been issued in the Yukon River Basin approximately three-quarters located on the shores of Lake Laberge, Tagish and Marsh Lakes. There are 300 names on the current (1978) lot waiting list. Nearly seventy percent of Yukon Government campgrounds are situated throughout the Yukon River Basin... the majority of identified historic sites are located on shorelands. In some cases, such as the Yukon, Pelly and Stewart Rivers, the watercourse itself provides the historic element... Boat rentals are offered through five commercial outlets and there are at least six commercial fish guiding services available. In addition, fourteen boat tour companies are in operation, eight of them specific to the Yukon River (1975).''

(Source: Preplanning Task Force Report.)

Clearly, current and proposed activities for tourism, parks and recreation will be fundamentally affected by a major dam on the Yukon. These activities are labour-intensive and have long-term and both direct and indirect effects on the Yukon economy.

PROPOSED DAM SITE AT EAGLE'S NEST BLUFF



SHOWING POTENTIAL AREA OF FLOODING

PIPER PAYER HAS RIGHT TO KNOW TUNE

The release of Treasury Board documents pertaining to the Northern Canada Power Commission is at very least likely to fuel the debate over the proposed Eagle's Nest dam site.

More importantly the leak raises the whole question of the secretiveness of NCPC's operations, and the degree to which Yukon people have the right to know what the power Commission is doing on "their behalf".

NCPC is mandated to provide power, and certainly it has an obligation to search for and develop potential power generating sites, but like any crown corporation it also has an obligation to the people it serves, and the ones who pick up the bill.

That obligation is even stronger for NCPC than for most crown corporations. Unlike Air Canada, or the Canadian National Railways, NCPC is not subsidized by all Canadian taxpayers. Indeed the legislation administering NCPC does just the opposite. It requires that NCPC break-even, and that its revenues be derived from charges for power used by northern consumers.

In a nutshell that means that NCPC gets all of its money out of the pockets of people living in the Yukon and NWT, and it is therefore incumbent upon NCPC that it make every effort to include Northerners in its planning process, and certainly not try and 'hide' anything.

So far the leaked documents from the Yukon Conservation Society don't contain any startling information. The documents raise as many questions as they answer, and despite the attempt by NCPC officials to downplay the seriousness of the leak the simple fact remains that NCPC would just as soon go about the business of damming Yukon rivers without answering too many questions.

That option isn't open to the Commission, nor should it be. The territory's rivers are one of its most important natural resources, and use of those rivers by NCPC is akin to them being placed in trust to be harnessed for the benefit of all Yukoners.

All of which is not to suggest that there shouldn't be a dam at Eagle's Nest or anywhere else if the need is proven. Indeed the need to expand the power base in the Yukon is an obvious and necessary step for development in the territory. But those steps must be taken with full public knowledge.

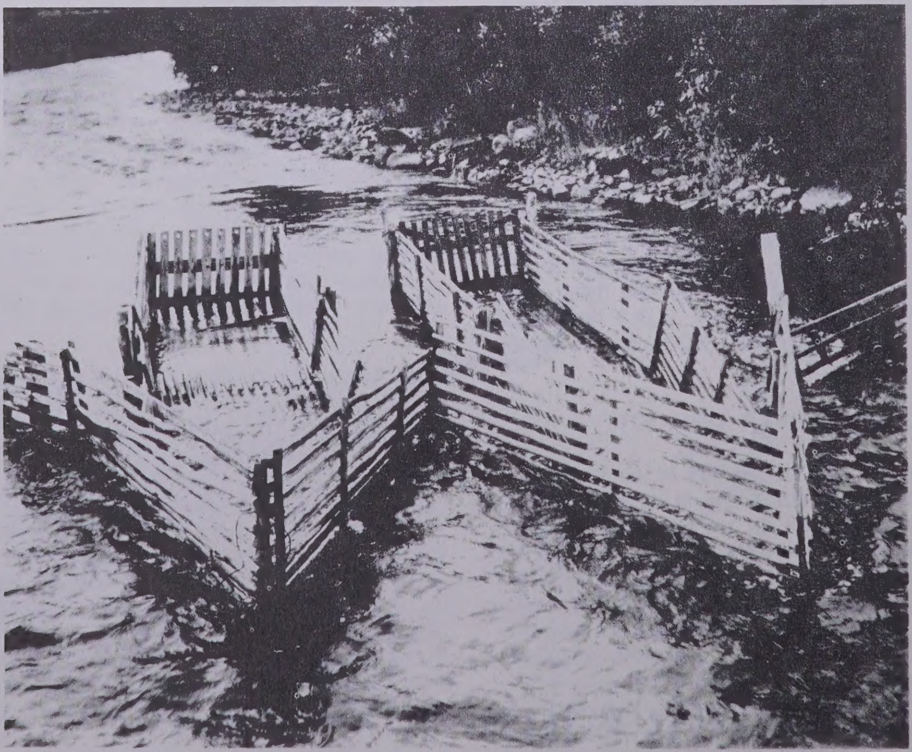
While it may not make NCPC's job any easier to have constant scrutiny from the public, it must be accepted as a cost of interfering with the Yukon's rivers.

By being secretive NCPC has invited the kind of suspicion with which it is held by many Yukoners. A change in attitude from the crown corporation is necessary or the current adversary stance which exists between NCPC and many interest groups will worsen.

At very least NCPC should see the writing on the wall. Leaks are impossible to stop, even for people in the dam business. On the other hand if NCPC were to invite the Conservation Society and others to be a part of its planning process, a degree of understanding and respect might be fostered which would ease some of the tension, and might even make it easier and faster to bring needed projects on line as soon as possible.

As for the Yukon Conservation Society, its fight so far has been for information. The Society can only be commended, not only for its diligence, but for its committment to safeguard Yukoners' right to know what is planned for the rivers of the territory.

(Editorial from **The Northern Times**, Friday, August 3, 1979)



Fish traps on Klukshu Lake used for harvesting the annual Pacific salmon migration.

Drowned trees and debris in Mayo Lake
testify to the waste and destruction resulting from thoughtless hydro electric power development.

CONCLUSION

In 1975, the Conservation Society held a public seminar about Yukon energy circumstances, focusing particularly on hydro. Experts in various fields were generally agreed that insufficient information was then available to know the consequences of building a hydro dam. After four years, N.C.P.C. and the Federal Government still have not obtained the information needed and N.C.P.C.'s current studies will not provide it either. The conclusion reached by Pierre Berton in that 1975 Y.C.S. report still holds true, so we simply repeat it: "... we do not yet have enough information to commit ourselves to any hydro electric dam on the Yukon or its tributary rivers. In fact, it is not even certain that we need that dam. We simply don't know enough about the resources that will be damaged and we haven't given ... any real thought to the future of the Yukon Territory. ...the value of the environment has been neglected... Until very recently, wilderness was wilderness - something without intrinsic value to be "tamed" or exploited, turned into dollars, made to produce jobs (mainly for outsiders). The emphasis on expediency - on the need to provide jobs, no matter how temporary - has always been at the root of northern development philosophy. I have seen that tragic residue of that philosophy all across the Canadian north ... in the form of ghost towns, abandoned machinery, grass-covered roads, rotting buildings, piles of junk and worst of all, the saddening degradation of the native population. ...the untrammelled wilderness itself is the most valuable asset the Yukon has. I believe that before the end of this century, it will be beyond price."

The Federal Department of the Environment just recently arrived at the same conclusion and recommended a comprehensive study of the Yukon River Basin: "Some of these interests (i.e. N.C.P.C.) have undertaken detailed surveys and are formulating specific plans while information on other resource possibilities remain less developed resulting in a situation where trade-offs involving one course of action over another remain largely unknown. An open information-exchange process has not evolved... Concern is being expressed by Canadians in general and the Basin residents in particular that irreversible decisions may be made in the absence of adequate knowledge... The study proposed in this report (Preplanning Task Force Report) will serve to provide the resource information initially needed for the evaluation of potentially conflicting resource use options currently being considered for the Basin."

WHAT IS NEEDED

FIRST, N.C.P.C.'s investigations at Eagle's Nest Bluff should be suspended until the following steps have been completed.

SECOND, the resources of the Yukon River Basin should be inventoried and opportunities explored for alternate use of these resources. As part of this, the Federal Government should approve and fund the study recommended in the Dept. of Environment report. Other studies are being conducted by the Westwater Research Institute at the University of British Columbia.

THIRD, after this information is available, there should be a full public discussion which results in a public policy for energy and for development paths for the Yukon. This would include the role of hydro in an energy policy. Only then would it be appropriate for N.C.P.C. to investigate various potential hydro sites and to choose among them.

WHAT CAN YOU DO?

1. Decide whether you think the approach suggested here is reasonable.
2. If so (or even if not), make your views known by (a) writing our M.P. Eric Neilson, House of Commons, Ottawa; (b) send a copy to Jake Epp, DIAND Minister, House of Commons, Ottawa; (c) send a copy to Yukon Government Leader Chris Pearson; (d) send a copy to the Whitehorse Star.
3. Attend public meetings, phone your M.L.A., support the Yukon Conservation Society with your membership, volunteer time, a donation. If everyone takes only a few moments now and again, we can have an impact. Do it now.
4. Demand to be involved in this decision-making.

Further Reading

1. Yukon Conservation Society, "Yukon Power : A Symposium", Whitehorse, 1975
2. Dept. of Environment, Canada, *Yukon River Basin: Preplanning Task Force Report,* Vancouver, September, 1979.
3. Sigma Resources Consultants, *The Developmment of Power in the Yukon,* March 1975.

Check the Yukon Archives for these materials.

ABOUT THE YUKON CONSERVATION SOCIETY

The Yukon Conversation Society seeks to secure the wise use, protection and preservation of scenic, scientific, recreational, educational, wildlife and wilderness values of the Yukon Territory.

Now in its tenth year, The Yukon Conservation Society is Canada's only northern-based conservation group. In the past few years YCS has attracted increasing attention from industry, government and 'outside' environmental groups with its persistent questioning and constructive criticism of conventional development schemes. For its second decade the YCS Board of Directors is determined that the Society shall propose real alternatives for the development of Yukon resources, alternatives that will preserve the Yukon's unique natural and human habitat.

YCS has an office at 302 Steele St., Whitehorse, Yukon Territory, telephone (403) 667-4510.

Send to: Secretary, Yukon Conservation Society, P.O. Box 4163, Whitehorse, Y.T.

☐ I wish to have more information about the Society and would like a YCS board member to contact me.

☐ I wish to join the Society and I enclose
  ☐ $5. individual membership ☐ $8 family membership

☐ I wish to help in the Society's activities.

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